

American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

Summer 21 22

Section: A

Software Quality Assurance and Testing

Online Pet Care

A Report submitted By

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Software Test Plan

for

<Online Pet Care>

Version 1.0 approved

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<American International University-Bangladesh>

<5 August, 2022>

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Revision History

Revision	Date	Updated by	Update Comments
0.1	2022.08.05	Anik Kumar Saha	First Draft
0.2	2022.08.08	Tasmia Tamanna Pria	Second Draft
0.3	2022.08.11	Syed Rafin Bin Momin	Third Draft
0.4	2022.08.14	Rahul Saha	Fourth Draft
0.5	2022.08.19	Anik Kumar Saha	Final Draft

1. TEST PLAN IDENTIFIER: OPC_01

2. REFERENCES

- Software Requirement Specification (SRS) Document
- o https://mockflow.com/
- o https://capstoneguide.com/pet-care-management-system-capstone-project-document/

3. INTRODUCTION

3.1 Background to the Problem

We who own pets, have to face many problems when it comes to giving our pets immediate aid/treatment. It's a common scenario in every house who owns pets that they can't get their pets immediate treatment because of so many reasons such as being unable to reach vets in time, not being able to know with whom to talk etc. Also, there is another problem and that is, we often encounter street animals getting injured on roads and there also, we are kind of hopeless as by the time help reaches, it's already too late sometimes. And additionally, it is also sometimes difficult to buy foods or toys for our pets from home. So, we decided to make a system by which all these problems can be overcome.

3.2 Solution to the Problem

To solve this problem, we have come up with an idea of making a mobile application for easier access to vets and on-time treatment.

Our application is called "PetCare" which will have 4 types of users and they are pet owners, vets, shop owners, rescue center. This app will allow us to do certain operations such as,

- Pet owners can request for pet rescue
- Pet owners can post pictures and videos
- Users can search for pet adoption
- Pet owners can buy foods and toys for their pets
- Shop owner can update products
- Rescue centers can update pet info
- Rescue centers can approve rescue request

Rescue centers can approve adopting request

Vets can do consultation with owners who need them

The main goal of this application is to make the above mentioned daily works easier for pet owners as well as for the pets. And the target market for our app are mainly the vets, pet owners, shop

owners and rescue centers but in general this app will be helpful for all.

4. REQUEIREMNT SPECIFICATION

4.1 System Features

1. System Registration

Functional Requirements

1.1 The software shall allow users to register with the required information

1.2 If the username is not unique, the system shall request the user to try registering with

different username again.

Priority Level: High

Precondition: Not applicable.

2. System Login

Functional Requirements

2.1 The software shall allow users to login with their given username and password

2.2 If the username and/or password has been inserted wrong for more than three times, the

random verification code will be generated by the system to retry login.

2.3 If the number of login attempt exceed its limit (5 times), the system shall block the user

account login for one hour [optional function]

Priority Level: High

Precondition: User must have valid user id and password

3. Request for Rescue

Functional Requirements

3.1 The software shall allow users to request for rescue, to rescue centers with location and

description

3.2 If location is not given, the system must not send request and tell the user to try again with

proper location

3.3 Adding description can be optional

Priority Level: High

Precondition: User must have valid account

4. Post Pictures and Videos

Functional Requirements

4.1 The software shall allow users to post their pets' pictures and videos

4.2 If no post is added, the system must not allow user to submit the post

Priority Level: Low

Precondition: User must have valid account

5. Search for Adoption

Functional Requirements

5.1 The software shall allow users to search for pet adoption and also adopt pets from the rescue

centers

Priority Level: Medium

Precondition: User must have valid account

6. Buy Foods and Toys

Functional Requirements

6.1 The software shall allow users to purchase toys and foods for their pets from the shop

Priority Level: Low

Precondition: User must have valid account

7. Update Products

Functional Requirements

7.1 The software shall allow shop owners to update their available products in the app with

proper information such as product name, product quantity and product price

7.2 If the required information is not filled, the system must now allow the user to update the

product information

Priority Level: Low

Precondition: User must have valid account

8. Update Animals' Information

Functional Requirements

8.1 The software shall allow rescue centers to update the pets' information with proper information through the app so that users can adopt from them

8.2 If the required information is not filled, the system must now allow the user to update the pet's information

Priority Level: Medium

Precondition: User must have valid account

9. Approve Rescue Request

Functional Requirements

9.1 The software shall allow rescue centers to approve rescue request sent by the customers

9.2 A notification must be sent to the customer who have sent the request saying that "We have got your rescue request and we are on our way to reach there."

Priority Level: High

Precondition: User must have valid account

10. Approve adopting Request

Functional Requirements

10.1 The software shall allow rescue centers to approve adopting requests

10.2 A notification must be sent to the customer who have sent the request saying that "We have got your request." With mentioning the time when the pet will be arrived at their doors

Priority Level: Medium

Precondition: User must have valid account

11. Start Consultation

Functional Requirements

11.1 The software shall allow customer and vets to consult when customer wishes to consult

11.2 Customers shall appoint for the specific vets they need and a time will be booked when the vet is available to consult

11.3 Vets shall see which customers are waiting for his response for a consultation and he shall accept as his wish and consult with them after giving them a fixed time by message

Priority Level: High

Precondition: Users must have valid accounts

4.2 System Quality Attributes

1. **Usability:** The system shall be effortless to use. The system should be user-friendly and easy to navigate locations.

- 2. **Efficiency:** The system should make perfect use of the processor capacity and memory. The completion of any task should be completely efficient.
- 3. **Security:** The system security should be sufficient to prevent unauthorized access to system functions to prevent information loss, to protect the privacy of data and protect the system from virus.
- 4. **Modularity:** The system's every block of code must be under separate and suitable modules.
- 5. **Testability:** The system should be easy to test and find defects.
- 6. **Flexibility:** The system should be flexible enough to be modified.
- 7. **Reusability:** Code library classes should be generic enough to be reused on different versions of an application or new projects.

4.3 System Interface

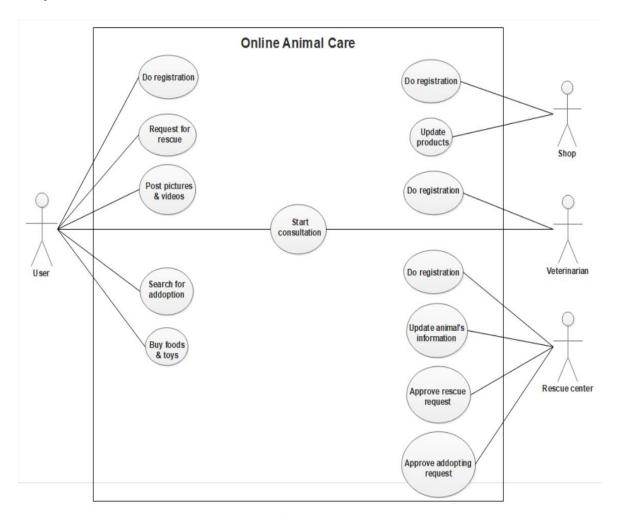


Figure 1: System Overview



Figure 2: UI for Home page

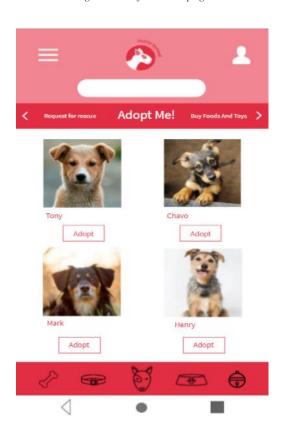


Figure 4: UI for Adopting page



Figure 3: UI for Registration page

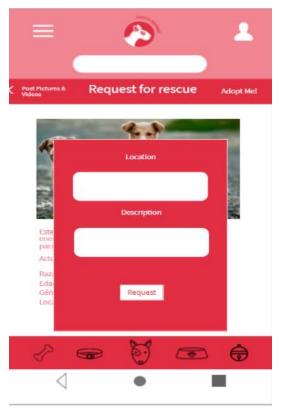


Figure 5: UI for Rescue Request page

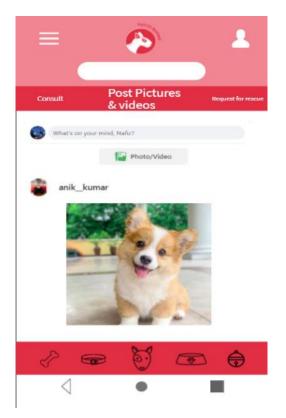


Figure 6: UI for posting page

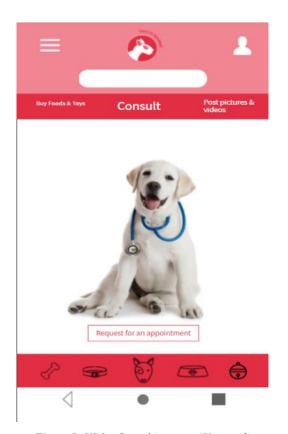


Figure 8: UI for Consulting page (User end)

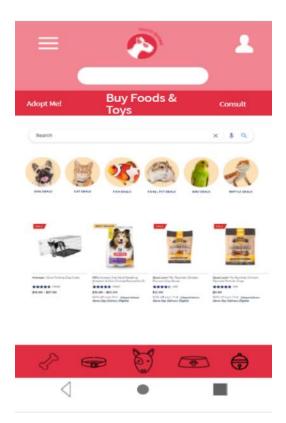


Figure 7: UI for Buying page



Figure 9: UI for Consultation (Veterinarian end)







Figure 11: UI for Pets' Info Update page

4.4 Project Requirements

- 1. The code must be written with Dart language.
- 2. For application shall use Flutter framework.
- 3. For software databases shall use oracle database server but other databases are also acceptable.
- 4. For software development, shall use Android studio.
- 5. For testing, shall use Appium Automation and Flutter Test software.
- 6. The software size is maximum 200MB.

Constructive Cost Model

```
Software project type: Organic
```

Coefficient_{<Effort Factor>} = 2.4

So, P = 1.05 and T = 0.38

SLOC = 25000 Lines

Persons-months, PM = Coefficient_{<Effort Factor>} * (SLOC/1000)^P

= 2.4 * (25000/1000)^1.05

=70.48

Development time, DM = $2.50 * (PM)^T$

 $= 2.50 * (70.48)^{0.38}$

= 12.59 = 13 months

= 1560 Working hours in total (Per week 30 hours)

Required number of people, ST = PM/DM

= 70.48/13

= 5.42 = 6 people

Budgeting

Developer/Tester salary of 13 months:

Per employee salary per month = 35000 Taka = 300 Taka per hour

Total salary = 300 * 1560 = 4,68,000 Taka

Requirement analysis:

Required time = 1 month = 22 working days = 176 working hour

Requirement analysis person's per hour salary = 200 Taka

Total requirement analysis salary = 200 * 176 = 35,200 Taka

Transportation cost: 10,000 Taka (Approximate)

Hardware expense: 1,00,000 Taka (Approximate)

Rent expenses:

Room per month = 12,000 Taka

Total in 12 months = 1,08,000 Taka

Total utilities in 13 months: 15,000 Taka (Approximate)

Maintenance (Till 3 months after delivery):

Cost per hour = 1,200 Taka

Total estimated time needed for maintenance = 30 hours

Total estimated maintenance cost = 1,200 * 30 = 36,000 Taka

Project manager's salary of 13 months:

Per month salary = 30,000 Taka

Total salary = 30,000 * 13 = 3,90,000 Taka

Accountant's salary of 13 months:

Per month salary = 5,000 Taka

Total salary = 5,000 * 13 = 65,000 Taka

Total expense: 4,68,000 + 35,200 + 10,000 + 1,00,000 + 1,08,000 + 15,000 + 36,000

+3,90,000+65,000=1,227,200 Taka

Profit: 25% of total expense = 1,227,200 * 25% = 3,06,800 Taka

Total budget: 1,227,200 + 3,06,800 = 1,534,000 Taka

5. FEATURES NOT TO BE TESTED

- Networks
- o Hardware
- o Users' registration information (Name, Address, Phone number)

6. TESTING APPROACH

6.1 Testing Levels

The testing for the "PetCare" project will consist of Unit testing, System testing, Integration testing and Acceptance test levels. It is hoped that there will be at least one full time independent test person for system/integration testing. However, with the budget constraints and timeline established; most testing will be done by the test manager with the development teams' participation.

- O <u>Unit testing</u>: In this stage, every small software unit will be tested time to time by the developer. The code will be reviewed line by line by the programmer by a few techniques. It will basically be a white box testing where no code execution will be done.
- o <u>Integration testing</u>: A software project consists of multiple software modules, coded by different programmers. In this stage, individual software modules will be combined and tested as a group. This level of testing is to expose defects in the interaction between these software modules when they are integrated. This testing will be done by the tester.
- System testing: In this stage, any irregularity will be detected if there is any between the units that are integrated together. This testing defects within both the integrated units and the whole system. This testing will also be done by the tester.

Acceptance testing: In this stage, the testing will determine whether the software system has met the specified requirements or not. It will verify if it has satisfied all the client demands or not. This testing will be done by end-users.

6.2 Test Tools

- The tool Testopia will be used for test case management. It is designed to be a generic tool for tracking test cases, allowing for testing organizations to integrate bug reporting with their test case run results.
- o The Appium Automation and Flutter Test software will be used to automate the testing.
- Jira project management tool will be used to share documents, communicate with team members,
 to keep track of schedule and planning, the progress of the testing project and so on.

6.3 Meetings

The test team will meet once in every week to evaluate progress to date and to identify error trends and problems as early as possible. The test team leader will meet with development and the project manager once every two weeks as well. These two meetings will be scheduled on different weeks. Additional meetings can be called as required for emergency situations.

7. TEST CASES/TEST ITEMS

Project Name: Online Pet Care	Test Designed by: Anik
Test Case ID: PC_01	Test Designed date: 04/08/2022
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: Registration.	Test Execution date:
Test Title: verify registration with valid information.	
Description: Test the registration page.	
Precondition: User has to provide valid information	

Precondition: User has to provide valid information.

Dependencies: None

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Go to the	Not Applicable	User should able to	As expected	Pass
registration page.		registration		
2. Enter required valid		successfully.		

information.		
3. Click submit		

Post Condition: After registration user's account is created successfully and all the information is stored in the database, user now can login into the account.

Project Name: Online Pet Care	Test Designed by: Anik
Test Case ID: PC_02	Test Designed date: 04/08/2022
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: Login	Test Execution date:
Test Title: verify login with valid username and password	
Description: Test the software login page	

Precondition: user has valid username and password

Dependencies: Register

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Start the s/w	Username: urs99	User should login	As expected	Pass
2. Enter username	Password: 321	into the application		
3. Enter password				
4. Click submit				

Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.

Project Name: Online Pet Care	Test Designed by: Anik
Test Case ID: PC_03	Test Designed date: 04/08/2022
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: Request for rescue	Test Execution date:
Test Title: Verify the requesting page.	
Description: Test the request page.	

Precondition: User has to have a valid account with location

Dependencies: Location

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Go to the requesting	Provide valid	User should able to	As expected	Pass
page page.	location.	request		
2. Enter the location		successfully.		
and details about the	Provide valid			
pet.	information about			
3. Click request.	the pet.			

Post Condition: After requesting the system shows a successful message to the user.

Project Name: Online Pet Care	Test Designed by: Pria
Test Case ID: PC_04	Test Designed date: 10/08/2022
Test Priority (Low, Medium, High): Medium	Test Executed by:
Module Name: Post pictures and videos	Test Execution date:
Test Title: Verify the posted(timeline) page.	
Description: Test the posted(timeline) page.	

Precondition: User has to be logged in and post with restrictions.

Dependencies: None

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Go to the timeline	Post the photos	User should able to	As expected	Pass
page.	and videos with	posted successfully.		
2. uploads the pictures	restrictions.			
and videos.				
3. Click upload to post				

the photos and videos.				
Post Condition: After posting the system shows a successful message and take back on the timeline to				
the user.				

Project Name: Online Pet Care	Test Designed by: Pria
Test Case ID: PC_05	Test Designed date: 10/08/2022
Test Priority (Low, Medium, High): Medium	Test Executed by:
Module Name: Search for adoption	Test Execution date:
Test Title: Verify the search for adoption page.	
Description: Test the searching page.	

Precondition: User has to be logged in.

Dependencies: None

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Go to the searching	Search with valid	User should able to	As expected	Pass
page.	data.	search his required		
2. Enter required pet		pet successfully.		
to search for adoption.	Select among the			
3. Click Search.	posted pet for			
	adoption.			

Post Condition: After searching the system shows the required pet information to the user.

Project Name: Online Pet Care	Test Designed by: Rahul
Test Case ID: PC_06	Test Designed date: 13/08/2022
Test Priority (Low, Medium, High): Medium	Test Executed by:
Module Name: Buy foods and toys	Test Execution date:
Test Title: Verify the shopping page.	
Description: Test the shopping page.	

Precondition: User has to be logged in.

Dependencies: None

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Go to the Shopping	Select and	User should able to	As expected	Pass
page.	payment the	buy products		
2. Buy required foods	products for	successfully.		
and toys for the pets.	shopping.			
3. Click buy.				

Post Condition: After shopping the system will take the user to order status page and the products will deliver within 3/4 days to the user.

Project Name: Online Pet Care	Test Designed by: Rahul
Test Case ID: PC_07	Test Designed date: 13/08/2022
Test Priority (Low, Medium, High): Medium	Test Executed by:
Module Name: Update Data (Rescue Center)	Test Execution date:
Test Title: Update animal information	
Description: Update animal information with valid	
information	

Precondition: User has to be valid and has valid information for update.

Dependencies: User Login

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Log in with valid	Valid	User should be able	As expected	Pass
information	information for	to update the animal		
2. Click Update	update animal	information		

Information	information		
3. Enter valid			
information for update			
4. Click submit			

Post Condition: After Updating the animal information it will redirect to the same show information page and user will be able to see the new added information.

Project Name: Online Pet Care	Test Designed by: Rafin
Test Case ID: PC_08	Test Designed date: 14/08/2022
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: Approve Request	Test Execution date:
Test Title: Approve rescue request	
Description: Approve the rescue request from user with	
information check.	

Precondition: User must have to request for rescue with valid information

Dependencies: Rescue Location

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Select rescue	Valid location	User should be able	As expected	Pass
request	with rescue	to approve rescue		
2. Open request	request details	request		
3. Click approve				
rescue request				

Post Condition: After approving rescue request user will return to approve request page with other requests.

Project Name: Online Pet Care	Test Designed by: Rafin
Test Case ID: PC_09	Test Designed date: 14/08/2022
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: Approve Request	Test Execution date:
Test Title: Approve adopting request	
Description: Approve the animal adopting request from	
user	

Precondition: User has to chose animal for adoption

Dependencies: Select Animal

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Select adopting	Animal	User should be able	As expected	Pass
request for animal	adaptation	to approve animal		
2. Open request	request from	adaptation request		
3. Click approve	user			
adaptation request				

Post Condition: After approving request user will return to approve request page with other requests.

Project Name: Online Pet Care	Test Designed by: Rafin
Test Case ID: PC_10	Test Designed date: 13/08/2022
Test Priority (Low, Medium, High): Medium	Test Executed by:
Module Name: Update Products (Shop)	Test Execution date:
Test Title: Update product information	
Description: Update product information with valid	
information	

Precondition: User has to be valid and has valid information for update.

Dependencies: User Login

Test Steps	Test Data	Expected Results	Actual	Status
			Results	(Pass/Fail)
1. Log in with valid	Valid	User should be able	As expected	Pass
information	information for	to update the product		
2. Click Update	update Product	information		

Information	information		
3. Enter valid			
information for update			
4. Click submit			

Post Condition: After Updating the product information it will redirect to the same show information page and user will be able to see the new added information.

8. ITEM PASS/FAIL CRITERIA

The entrance criteria for each phase of testing must be met before the next stage can take place. Now the criteria for pass and fail are given below-

- According to the given scenario, the expected result needs to occur, then the design will be considered pass; otherwise, that criteria should be failed.
- If an item tested ten times, nine times perfectly worked, and a single time does not work correctly, it will be considered as fail case.
- System crash will be considered a failure case.
- After submitting a query in the system, it will be considered a fail case if the expected page doesn't appear.

9. TEST DELIVERABLES

- Master test plan (this document)
- o Individual test plans for each phase of the testing cycle
- Test Design Specifications
- Acceptance test plan
- System test plan
- Integration test plans
- Unit test plans
- Screen prototypes
- o Test scenario and expected result in an excel sheet
- Defect reports and summaries

10. STAFFING AND TRAINING NEEDS

This section describes how to approach staffing and preparing the test jobs for the task. It is preferred that there will be at least one full time tester assigned to the project for the system/integration and acceptance testing phases of the project. It is reasonable that the vast majority of the staff will accept some testing jobs. The accompanying jobs are addressed below:

- Project Manager: Responsible for the complete execution of the project. This incorporates
 making necessities, supervising the testing cycle etc. So, project manager must be trained on
 these fields.
- Test Manager: Responsible for making the expert test plans, investigating the test deliverable, dealing with the test cycles and suggesting when testing is finished. So, test manager must be trained on evaluating professional standard test plans.
- Test Engineer: Responsible for planning the tests, making the test methods, making the test information, executing tests, composing mechanized test strategies, and detailing measurements to the test administrator. So, test engineers should have the knowledge of planning and executing any test case using automated tools.

11. RESPONSIBILITIES

	TM	PM	Dev	Test	Client
			Team	Team	
Acceptance test documentation & execution	X	X			
System/Integration test documentation &	X	X			X
execution					
Unit test documentation & execution	X	X		X	X
System Design Reviews			X		X
Detail Design Reviews			X		X
Test procedures and rules	X	X		X	
Screen & Report prototype reviews			X		X
Change Control and regression testing	X	X	X	X	

12. TESTING SCHEDULE

- A. Requirement
- B. Construction prototype
- C. Deliver and feedback
- D. Overall design
- E. Overall design again
- F. Specify module 1
- G. Specify module 2
- H. Specify module 3
- I. Code implementation 1
- J. Code implementation 2
- K. Code implementation 3
- L. Integration testing
- M. System testing

Name/Weeks	1-2	3-4	5-6	7-8	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22-23
A: Anik												
B: Pria												
C: Rafin												
D: Rahul												
E: Pria												
F: Rahul												

Name/Weeks	24-26	27-29	30-32	33-35	36-37	38-39	40-41	42-43	44-46	47-48	49-52
G: Anik											
H: Pria											
I: Rafin											
J: Rahul											
K: Anik											
L: Rafin											
M: Anik											

13. PLANNING RISKS AND CONTINGENCIES

- 1. Identify Risks and triggers.
- 2. Classify and prioritize all risks.
- 3. Monitor for risk triggers during the project.
- 4. Might arise time delays during consultation between pet owners and vets.
- 5. Time delays may occur in navigating location for rescue request.

14. APROVALS

Project Sponsor – Anik Kumar Saha	Approved
Development Management - Tasmia Tamanna Pria	Approved
Edi Project manager - Syed Rafin Bin Momin	Approved
RS Test Manager - Anik Kumar Saha	Approved
Rs Development Team Manager - Syed Rafin Bin Momin	Approved
Reassigned Sales - Tasmia Tamanna Pria	Approved
Order Entry Edi Team Manager - Rahul Saha	Approved

THE END